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Yi-Zhi Huang* (yzhuang@math.rutgers.edu), Department of Mathematics, Rutgers University, 11) Frelinghuysen Road, Piscataway, NJ 08854. *Deformation theory of grading-restricted vertex algebras*. Preliminary report.

I will present a deformation theory of grading-restricted vertex algebras. Motivations for this deformation theory are from the studies of quantization and Calabi-Yau manifolds. This deformation theory is described by suitable second and third cohomologies of these vertex algebras introduced by me in 2010: An infinitesimal deformation of a grading-restricted vertex algebra is given by a second cohomology class and the obstruction for a formal deformation with a given infinitesimal deformation is a sequence of third cohomology classes. (Received June 11, 2011)